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DOE Final Rule: Transfer of Real Property at Defense Nuclear Facilities for Economic Development

DOE Federal Register Notice

November 13, 2013

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This morning, DOE released a final rule regarding "Transfer of Real Property at Defense Nuclear Facilities for Economic Development." The rule has not been modified for over 13 years. ECA will provide an analysis on the changes within the next week.

FINAL RULE SUMMARY:

The Department of Energy (DOE) is adopting the interim final rule published on February 29, 2000, 65 FR 10685, as final, with changes. The final rule establishes a process for transferring unneeded real property at DOE defense nuclear facilities, for the purpose of promoting economic development, and prescribes the process by which the Secretary of Energy (or delegate) can grant discretionary indemnification.

DOE: Nuclear waste move to Nevada to start in 2014

Steve Tetreault and Keith Rogers

Las Vegas Review-Journal

November 12, 2013

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Trucks hauling dangerous uranium waste from Tennessee for burial in a landfill at the Nevada National Security Site will begin rolling early next year despite objections from Gov. Brian Sandoval who is powerless to stop them, federal officials said Tuesday.

Department of Energy officials insisted the strategy will be safe despite questions about the suitability of disposing potent, highly radioactive nuclear material in trenches deeper than 40 feet in the southeast part of the former Nevada Test Site.

Kevin Knobloch, chief of staff to Energy Secretary Ernest Moniz, said Nevada cannot veto the disposal plan at the government's self-regulated site, 65 miles north of Las Vegas.

That leaves the state -- if it chooses -- with the possible threat of legal action or intervention by Nevada's congressional delegation led by Senate Majority Leader Harry Reid as remedies for DOE's plan.

In the face of opposition from Sandoval, Knobloch said DOE has pledged to "work very closely with state and local authorities to make sure we are listening to concerns, answering questions, sharing information."

Knobloch and other DOE officials spoke to reporters as DOE prepares for Wednesday night's public meeting at the Cashman Center in Las Vegas. That meeting will precede a second one Thursday in Pahrump to discuss the plan. Both meetings are scheduled for 5 p.m. to 9 p.m.

DOE planned to begin shipments last spring but put the campaign on hold when it became publicized and caused Nevada officials to declare a new uneasiness over them. Among other things, the waste is an unusual form that raised questions whether it fits the criteria to be buried at the security site alongside other contaminated debris from government cleanups.

For a state that fought tooth and nail against the proposed high-level nuclear waste repository at Yucca Mountain, the prospect for another type of highly radioactive waste to be buried in the state also was unsettling to environmental activists and some leaders.

If Nevada failed to put a foot down about the uranium material, or at least try, what other forms of nuclear waste might the government look to ship to the Silver State?

Sandoval and Moniz this summer assigned senior aides to meet on uranium waste and other matters that have created scratches in the long relationship between Nevada and the federal government over operations of the sprawling national security site.

The group held its initial meeting in Washington last month, although not all could attend due to the federal government shutdown. Officials from both the DOE and the state have expressed hope the group might come up with accommodations that would smooth over differences on the disposal plan.

"Governor Sandoval's views on the proposed U-233 waste shipment remains unchanged," spokeswoman Mary-Sarah Kinner said Tuesday. "That said, the U.S. Department of Energy retains the authority to dispose of low-level nuclear waste at the Nevada National Security Site, which is why the working group is so important to the state and other stakeholders."

DOE's plan calls for moving 403 canisters of nuclear-power fuel remnants to the Nevada site from Tennessee's Oak Ridge National Laboratory. The once-liquid waste from a 1960s reprocessing plant in upstate New York was solidified and baked inside steel canisters at the Oak Ridge lab where it has been stored in a historic Manhattan Project building since the mid-1980s.

The canisters containing a ceramic mixture of three uranium isotopes -- U-233, U-235 and U-232 -- will be transported to Nevada National Security Site as part of an environmental cleanup of the

Tennessee site. DOE officials say they prefer to begin the shipments early next year.

Mark Whitney, environmental cleanup manager at Oak Ridge, said between 50 and 100 shipments would be made over a period of 18 months to three years. DOE is not disclosing the transportation routes.

In Tuesday's conference call with reporters, Whitney acknowledged that the vast majority of the waste material, 76 percent, is uranium-235, the same atom-splitting isotope that has been used in some nuclear bombs that were tested during the Cold War at the Nevada Test Site.

He said only 10 percent of the waste consists of another atom-splitting isotope, uranium-233, even though the cocktail of uranium waste is commonly referred to as U-233. Uranium-233 is also a nuclear bomb material and will be around at least 159,200 years before half of its radioactive punch decays to safer levels.

Despite the atomic bomb materials that DOE officials say are benign because neutron-absorbing ingredients have been mixed to reduce the risk of an accidental nuclear reaction, Nevada officials have said a greater concern is an impurity that in the hands of terrorists could be turned into a so-called "dirty bomb."

The impurity is the other isotope, uranium-232. Though it has a much shorter half-life, roughly 70 years, waste containing it requires heavy shielding and must be handled using remote-controlled cranes.

And as it decays, U-232 creates a new menace: thallium-208. That offspring emits short-lived but intense, deadly gamma rays that are, in a nutshell, "radiotoxic" -- or biologically harmful to the human environment. Anyone tampering with the uranium-tainted waste in the canisters to extract material for a dirty bomb would risk death from gamma ray exposure.

Because of the high percentage of atom-splitting bomb ingredients, the material should not be permanently buried as low-level waste in a landfill because it doesn't meet Nuclear Regulatory Commission low-level radioactive waste guidelines, said Michael Voegele, former Yucca Mountain Project chief scientist who now works as a consultant to Nye County.

Some critics have noted DOE quietly changed its waste-acceptance criteria in May so that the Oak Ridge canisters could be disposed of as low-level waste that's five times more radioactive than previously allowed.

The longevity of the landfill as compared to a more fully contained geologic repository for containing waste for 10,000 years while it decays to safer levels is also an issue. In the case of Yucca Mountain, scientists considered future climate changes and other factors such as increased rainfall and earthquakes that could compromise the repository's ability to contain decaying, radioactive materials.

Frank Marcinowski, DOE's deputy assistant secretary for environmental management, said the agency's climate analysis shows there will be "no appreciable release" from the landfill before 10,000 years.

DNFSB's draft Strategic Plan (2014-2018)

Frank Munger's Atomic City Underground
November 5, 2013

[LINK](#)

The Defense Nuclear Facilities Safety Board is seeking comment on its draft Strategic Plan, FY 2014-2018. Here's the report (http://www.dnfsb.gov/sites/default/files/Announcements/FY%202014-2018%20Draft%20Strategic%20Plan_1.pdf). A notice was published in the Federal Register on Nov. 4. Comments can be sent to: mailbox@dnfsb.gov.

What's Holding Back Nuclear Energy: A look at the challenges that keep it from taking off--and how to meet them

Keith Johnson, The Wall Street Journal

November 11, 2013

[LINK](#)

Nuclear power seems to have it all. Like renewables, it emits no greenhouse gases. Like coal, it is always on. Nuclear doesn't face the price volatility that natural gas does, and it actually has a better safety record than the coal industry. For all of these reasons, plenty of countries, from China and India to the Middle East, are betting big on nuclear energy to power their futures.

So why does nuclear power's future in the U.S. look dim? A forecast by the Energy Information Administration, for example, gives it only 3% of new capacity for electricity generation through 2040--the same as for much-maligned coal.

Cheap and abundant natural gas is partly to blame. Indeed, gas-fired power is expected to grow 20 times as fast as nuclear through 2040. The sluggish economy and increasing energy efficiency are taking a toll as well, reducing growth in demand for more power and for more power plants in general.

But nuclear energy also faces challenges all its own, including sky-high costs, safety concerns, waste disposal and the threat of proliferation. Here's a closer look at these challenges--and at what their solutions might be.

Nuclear Economics

Nuclear plants are fantastically complex construction projects. They cost more and take longer to build than any other mainstream source of electricity. Exactly how long involves some guesswork, since no plant has been built in the U.S. for more than 30 years. (Two reactors are now under construction in Georgia, and two more are being built in South Carolina.) But the Energy Information Administration estimates it would take six years. That's two to three times longer than to build a gas, coal, wind or solar plant.

Longer construction times add up to more onerous financing terms and more inflation in the cost of components and engineering. Nuclear's estimated capital costs are \$5,429 per kilowatt--before interest charges. That compares with \$2,883 for coal, \$3,718 for coal-gasification, and \$5,138 for coal with carbon sequestration--a technology so expensive the industry says it isn't a viable option to meet new environmental standards.

POTENTIAL SOLUTIONS: One obvious way to make nuclear power (and renewables) more competitive would be to put a price tag on carbon pollution, such as a carbon tax or a cap-and-trade program. Since nuclear produces no greenhouse gases, it could become the biggest potential source of zero-carbon electricity.

Streamlining the licensing and permitting process could reduce costs. However, concerns about safety and potential vulnerabilities would make it hard for regulators to reduce their investigation into plants' design specifications and abilities to withstand earthquakes, floods or terrorist attacks.

Proposals for smaller, modular reactors--from less than one-tenth to one-third the size of a traditional reactor--could speed construction, reducing costs and financial risk. SMRs, as they're known, would be built using modular components made in factories and shipped to the site. Promoters hope that process would bring economies of scale to a business where few have existed.

So far, though, the Nuclear Regulatory Commission hasn't certified any SMR, and some critics say it could take years for the industry to scale up and bring per-kilowatt costs below what the big plants cost.

Meanwhile, several states now let utilities charge customers in advance for power-plant construction costs. Such payments, attached to utility bills, shave interest charges off a project and lower cost. Critics, however, say it shifts risk away from utilities and onto customers.

Safety

"Fukushima" now conjures up what "Chernobyl" did for a previous generation: scenes of catastrophic accidents that turn everyday power generation into serious health hazards and costly cleanups that last for decades. The 2011 meltdown at the Fukushima Daiichi plant carried enormous political impact, as well. Japan shut down all its nuclear plants, Germany swore off nuclear energy and the U.S. rushed to review safety at all its reactors.

Yes, other big industrial operations also have major, and sometimes fatal accidents; some, such as oil spills or chemical explosions, have effects lasting years. But because nuclear reactors use radioactive materials, the potential danger of nuclear accidents is greater--as is the public perception of risk.

SOLUTIONS: At Fukushima, a loss of backup power caused by the tsunami led to overheating, explosions and radioactive releases. Such dangers can be mitigated by increasing flood protection and making backup power safe and plentiful.

New nuclear reactors also include cooling systems that run on gravity, not pumps, theoretically making a Fukushima repeat all but impossible. Better waste storage can also limit some of the effects of nuclear accidents.

Some experts embrace thorium as a potentially safer nuclear fuel. It's more abundant than uranium and it isn't fissile, meaning nuclear chain reactions--the cause of meltdowns--would stop on their own. But critics say it would take decades to design, test and build a new fleet of thorium-based reactors and supporting infrastructure.

Nuclear Waste

In 1982, Congress decided the U.S. needed to store nuclear waste deep underground. The industry is still waiting for the regulatory steps required to make that happen. It has paid the federal government tens of billions of dollars for a deep geological storage facility that has never been built.

Meanwhile, the nuclear waste that plants produce--spent fuel rods--is kept in "temporary" storage, often for years, on site. Some sites use dry-cask storage for the older rods, and store more freshly spent fuel in pools.

The waste question isn't a huge economic burden for the industry. But, especially after Fukushima, concerns about spent fuel accumulating on site stoke public fears about nuclear safety.

SOLUTIONS:The Obama administration has nixed a proposed deep-storage site at Yucca Mountain, Nev., though a federal appeals court recently ordered the Nuclear Regulatory Commission to at least finish reviewing the decades-old project. Meanwhile, the administration's Blue Ribbon Commission has recommended creating an interim aboveground storage facility while planning for a deep facility to be operational by midcentury.

Interim storage seems appealing, since it doesn't require massive investment and would get fuel off-site. But some critics worry that an interim site would turn permanent through political inertia. And the amount of spent nuclear fuel already accumulated will require some form of permanent storage.

Some countries, such as Japan, reprocess spent fuel in order to recover uranium and minimize spent fuel. But that is an expensive proposition. It also fans fears of weapons proliferation because it involves separating plutonium. Reprocessing doesn't seem like an option at present for the U.S.

Small nuclear reactors are designed to store waste safely inside for decades--but the waste would still need a final home.

Thorium proponents say their reactors would produce less and less radioactive waste, but their molten-salt fuels create other storage challenges.
Proliferation

Nuclear power plants give rise to fears about nuclear-weapons proliferation mainly for two reasons. Weapons-grade materials, such as plutonium, are produced when plants in some countries reprocess their spent fuel so that leftover uranium can be used again. (Japan's new reprocessing complex will create enough plutonium for more than 1,000 bombs a year.) Also, the lower-grade uranium used in power generation can be enriched and used to make nuclear weapons.

Proliferation fears haunt the global expansion of nuclear power. In theory, any nation with the capacity to enrich uranium for civilian nuclear power (such as Iran) can further enrich it for weapons. Even when allies, such as South Korea, make a push for enrichment capability, it raises concerns because more countries could go nuclear in the future.

SOLUTIONS: In the U.S., there is no commercial reprocessing of nuclear fuel, which limits proliferation risks. Limiting uranium-enrichment capability to a handful of nations, and selling power-grade uranium to countries that need it, would also seem to limit the danger. But many countries, such as South Korea, see enrichment as a critical part of developing their nuclear industries.

Lawmakers Want Overall Budget Numbers Before Thanksgiving

Keelie Lunney, Government Executive

November 11, 2013

[LINK](#)

Top congressional appropriators are urging House and Senate budget conferees to agree by Dec. 2 on overall discretionary spending caps for fiscal 2014 and fiscal 2015.

Setting the spending caps for the current fiscal year and fiscal 2015 should be the conference committee's "first priority," said Kentucky Republican Hal Rogers and Maryland Democrat Barbara Mikulski, who lead the House and Senate appropriations panels respectively, in an Oct. 31 letter to top members of the group tasked with reaching a budget deal before mid-January.

"To accomplish our goal of funding the government for the rest of this fiscal year, we need a topline as soon as possible, and preferably by Thanksgiving," said Mikulski in a statement. The letter asks conferees to come up with spending caps no later than Dec. 2, ideally by Nov. 22 -- the Friday before the Thanksgiving holiday.

The budget conference committee must submit its recommendations by Dec. 13; the current continuing resolution funding the government expires on Jan. 15, 2014. Appropriators are worried they won't have time to agree on the 12 spending bills and send them to the president before the mid-January deadline, especially since the two chambers will be on recess for much of the time between Dec. 13 and Jan. 15. Mikulski and Rogers said they also want an overall spending cap for fiscal 2015 ahead of time to return to regular order and "avoid the situation we encountered this year" of having two different numbers dictating the appropriations process in the two chambers.

"The House and Senate should mark up and pass the 12 appropriations bills for the next fiscal year in a timely way, proceed to conference, send each of the individual bills to the president, and avoid yet another budget crisis or 'shutdown showdown,'" the Rogers-Mikulski letter stated. The House has passed four individual spending bills: Defense, Energy and Water, Homeland Security, and Military Construction and Veterans Affairs. The full Senate has not yet voted on any fiscal 2014 appropriations bills.

The House and Senate budget conferees, led by Rep. Paul Ryan, R-Wis., and Sen. Patty Murray, D-Wash., are supposed to reconcile differences during the next month between the House and Senate fiscal 2014 budget plans -- currently about \$91 billion apart. The lawmakers also are discussing how to deal with the next round of 10-year automatic spending cuts scheduled to begin kicking in on Jan. 15, 2014, when the current continuing resolution expires. The government will have to cut \$109.3 billion from the budget under sequestration -- half from defense and half from non-defense programs -- in fiscal 2014 unless Congress agrees on an alternative.

The House-Senate budget conference committee is scheduled to meet again publicly on Wednesday, Nov. 13.

Report: SRS linked to contamination

Derrek Asberry, Aiken Standard

November 11, 2013

[LINK](#)

Contamination in the Savannah River Swamp is linked to radioactive discharges from the Savannah River Site, according to a report published recently by The Wall Street Journal.

The report, "Waste Lands: America's forgotten nuclear legacy," includes a map that shows how close residents live to a radioactive site. The map pinpoints the swamp, which is located adjacent to the Savannah River, as one of many radioactive sites in the country, and it is the only one listed in South Carolina.

"This site handled (or was contaminated by) cesium and other discharges from the Savannah River nuclear facility, according to government records," the newspaper stated on its website.

The report referenced a 2001 study on the river that states the area between Steel Creek Landing and Little Hell Landing was contaminated by SRS operations. Water from Steel Creek flowed along the lowlands and resulted in the deposition of radioactive material. The water eventually

discharged into the Savannah River at Little Hell Landing, contaminating a portion of the Savannah River Swamp, the study stated.

DOE-SR representative Bill Taylor confirmed the information in an email to the Aiken Standard.

SRS reported the most recent findings in its 2012 Site Environmental Report, which can be found on its website at www.srs.gov/general/pubs/ERsum. While there is in fact radioactive contamination in the swamp, Taylor said the contamination levels are declining.

"The area in question is along the southern boundary of the Savannah River Site on Creek Plantation, which is privately owned land. Creek Plantation has been routinely monitored since the early 1970s," Taylor said in the email. "The most recent survey, conducted in 2012, showed a continued decline in the levels of cesium-137, strontium-89 and 90, and cobalt-60."

He also stated that soil and vegetation samples are taken at 54 separate locations along 10 sampling trails and are monitored to measure the radioactivity levels in the swamp on Creek Plantation.

In addition, there are also thermoluminescent dosimeters at 52 of the 54 monitoring locations, which determine ambient gamma exposure rates, he said.

"SRS also monitors the dose to a hunter or fisherman at Creek Plantation," Taylor said.

Contamination of the river has been a hot topic in recent months. At the Savannah River Caucus meeting in September, Tonya Bonitatibus from the Savannah Riverkeeper environmental group spoke about the contamination.

"The Savannah River is the fourth most toxic river in the United States," said Bonitatibus. "We have to dilute that waste. We can't look at it as state-by-state issue."

Derrek Asberry is a beat reporter with the Aiken Standard news team and joined the paper in June. He is originally from Vidalia, Ga., and graduated from Georgia Southern University with a journalism degree in May 2012.